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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/574,128

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Nicolai Tarasinski

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05/12/2010

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ONE JOHN DEERE PLACE
MOLINE, IL 61265

EXAMINER

COOLMAN, VAUGHN

ART UNIT

PAPER NUMBER

3618

MAIL DATE

DELIVERY MODE

05/12/2010

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/574,128	Applicant(s) TARASINSKI ET AL.	
	Examiner VAUGHN T. COOLMAN	Art Unit 3618	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 February 2010.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,5,7 and 8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,5,7 and 8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 April 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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DETAILED ACTION

Allowable Subject Matter

The indicated allowability of claim 6 (amended claim 1) is withdrawn in view of the newly discovered reference(s) to Maslov et al (U.S. Patent Application Publication No. US 2005/0045392 A1). Rejections based on the newly cited reference(s) follow.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1, 5, and 7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mollhagen (U.S. Patent No. 7,147,073 B2) in view of Ono et al (U.S. Patent Application Publication No. US 2004/0079574 A1), Prem et al (U.S. Patent No. 6,086,076), and Maslov et al (U.S. Patent Application Publication No. US 2005/0045392 A1).

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[claim 1] Mollhagen discloses a vehicle axle system having a vehicle axle supported for oscillation and having wheels (8) rotatably attached to the vehicle axle and having a torque tube (2) with one end connected to the vehicle axle for supporting an axle suspension (not shown), and having an electric drive (4) arranged on the vehicle axle for driving one of the wheels.

Mollhagen fails to disclose electric components for the electric drive being mounted to the torque tube. Ono teaches electric components (30, 31) for an electric drive being mounted to a support arm (20) and including a power electronics component (30) for controlling electric power delivered to the electric drive. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Mollhagen with the electric component mounting of Ono in order to provide the advantage of reducing the distance between the motor control unit and the electric drive and thus improving resistance to electrical noise.

Mollhagen does not explicitly disclose an axle suspension but does state that rocker arms (2) are “supported in a suitable manner”. Prem teaches an axle suspension (FIG 8) for a vehicle similar to the vehicle of Mollhagen. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Mollhagen with the axle suspension of Prem in order to provide the advantage of supporting the rocker arm of Mollhagen in a suitable manner.

Mollhagen is also silent on the braking resistance (hereinafter “regenerative braking”) for converting electric current generated by the electric drive into mechanical and/or thermal energy. Maslov teaches electric drive for driving wheels of a vehicle on a vehicle axle including regenerative braking for converting electric current into recaptured energy. It would have been

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obvious to one of ordinary skill in the art at the time the invention was made to provide the apparatus of Mollhagen with regenerative braking in order to increase the overall efficiency of the vehicle and decrease operating costs. With regards to the electric current being converted to mechanical or thermal energy, Examiner notes that the electrical energy recovered due to regenerative braking can be then converted to mechanical or thermal energy in any manner, of which most would have been obvious to one of ordinary skill in the art at the time the invention was made (such as running an electric fuel pump, starter motor, or the HVAC system).

[claim 5] Mollhagen in view of Ono and Prem discloses all of the elements of the claimed invention as described above except for an electric generator and a frequency converter associated therewith. Examiner notes that providing an electric generator (such as alternators, generators, or motor-generators) is old and well known in the art and It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Mollhagen with an electric generator as was known in the art in order to provide the advantage of reducing the electrical load on the engine and/or vehicle batteries. Examiner further notes that frequency converters such as inverters are also old and well known in the art and are commonly used (and obvious to one of ordinary skill in the art at the time the invention was made) to provide the advantage of converting alternating current to direct current (for storage in a battery or to drive a DC motor) and vice versa (to run vehicle electrical accessories such as headlights and radio).

[claim 7] Ono further teaches the electronics component being a controller (30).

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Claim 8 is rejected under 35 U.S.C. 103(a) as being unpatentable over Mollhagen in view of Ono, Prem, and Maslov; and further in view of Altherr et al (U.S. Patent No. 5,879,016).

[**claim 8**] Mollhagen discloses all of the elements of the claimed invention as described above except for the vehicle axle being steerable. Altherr teaches a vehicle having a vehicle axle (10) supported in a manner similar to that of Mollhagen. Glaser further teaches the axle being steerable. It would have been obvious to one of ordinary skill in the art at the time the invention was made to modify the apparatus shown by Mollhagen as modified by Ono, Prem, and Maslov by utilizing the apparatus with the steerable axle of Altherr in order to provide the advantage of increased traction for the vehicle.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Please see attached form PTO-892.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to VAUGHN T. COOLMAN whose telephone number is (571)272-6014. The examiner can normally be reached on Monday thru Friday, 10am-8pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Dickson can be reached on (571) 272-7742. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

VAUGHN T COOLMAN
Examiner
Art Unit 3618

/V. T. C./
Examiner, Art Unit 3618

/Paul N. Dickson/
Supervisory Patent Examiner, Art Unit 3616